UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,367	01/09/2001	Alexandre K. Shah	VLK-001.01	6641

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EXAMINER
BULLOCK JR, LEWIS ALEXANDER

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/757,367	SHAH, ALEXANDRE K.
Office Action Summary	Examiner	Art Unit	
	Lewis A. Bullock, Jr.	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-46_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-46_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _09 January 2001_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _7/7/o.}_

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 23 is objected to because of the following informalities: line 8 details "the

a". Appropriate correction is required.

Drawings

2.   New corrected drawings in compliance with 37 CFR 1.121(d) are required in this

application because of Draftperson's Review. Applicant is advised to employ the

services of a competent patent draftsperson outside the Office, as the U.S. Patent and

Trademark Office no longer prepares new drawings. The corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The

requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-6, 8-10, 13, 14, 18-22, 31- 39, 42-46 are rejected under 35

U.S.C. 102(e) as being anticipated by GHAFIR (U.S. Patent 6,202,159).

As to claim 1, GHAFIR teaches a method for processing a request, comprising:

receiving the request (via the multi-threaded vault process) (col. 6, lines 39-44; col. 6,

lines 60-64; col. 8, lines 20-54); selecting a software thread (idle thread) based on the

request (col. 9, lines 33-36) upon determining that the selected software thread requires

modification to process the request (context variables / application), updating the

selected software thread to process the request (via loading the application / context

variables) (col. 9, lines 27-33; col. 8, lines 20-38), and processing the request using the

selected software thread (col. 9, lines 33-36).

As to claims 2-4, GHAFIR teaches selecting the software thread includes

implementing a hash table (registry) to associate the request to at least one thread (idle

thread), translating the URL request (browser request in URL format) to a key and

indexing the hash table (col. 4, lines 2-15).

As to claim 5, GRAFIR teaches a dispatcher determining whether the threads are

idle or not in order to distribute work (col. 4, lines 29-40). Therefore, it is inherent within

the teachings of GRAFIR that the longest idle thread is selected for processing the

request.

As to claims 6 and 8, GHAFIR teaches verifying the software thread includes application logic (application / shared library) to process the request and receiving application logic to process the request (via loading on demand the application domain / shared library) (col. 9, lines 27-33; col. 8, lines 20-38).

As to claims 9 and 10, 13 and 14, GHAFIR teaches establishing a persistent connection between the selected software thread (thread) and at least one database file system, i.e. a daemon (shared library / storage storing application) (via loading the shared library) (col. 9, lines 27-33; col. 8, lines 20-38; col.3, line 66 – col. 4, line 5).

As to claim 18, GHAFIR teaches returning the processed request to the requesting device (col. 4, lines 45-51).

As to claims 19 and 20, GHAFIR teaches receiving the request from a server (other vault processes) or a client (browser) (col. 4, lines 55-59).

As to claims 21 and 22, GHAFIR teaches receiving a network HTTP request (col. 7, lines 44-50).

As to claim 31, GHAFIR teaches a system for processing a request (URL request), comprising: a first server (vault process) to receive the request (URL request) (col. 6, lines 39-44; col. 6, lines 60-64; col. 8, lines 20-54), and a plurality of software

threads (threads) to process the request, the software threads being adaptable to incorporate application logic based on the request (via loading the application / context variables to the threads to process the request) (col. 9, lines 27-33; col. 8, lines 20-38).

As to claim 32, GHAFIR teaches at least one of the alternate servers (vault process) being in communication with the first server (vault process), the alternate servers capable of receiving requests from at least one of the first server and at least one alternate server (via the valut process being able to receive request from other vaults) (col. 4, lines 55-59).

As to claim 33, GHAFIR teaches the at least one alternate servers (other vault process) comprise a plurality of software threads (via the process being multithreaded / threads of process) adaptable to incorporate application logic (application) based on the request to process the received request (via loading the application / context variables) (col. 9, lines 27-33; col. 8, lines 20-38).

As to claim 34 and 35, GHAFIR teaches a decision module selecting the software thread by a hash table (registry) to associate the request to at least one thread (idle thread), translating the URL request (browser request in URL format) to a key and indexing the hash table (col. 4, lines 2-15).

As to claim 36, GRAFIR teaches the request includes a URL (col. 4, lines 2-5).

As to claim 37, GRAFIR teaches the request is received via a network (from the client browser) (col. 4, lines 2-5).

As to claims 38 and 39, GRAFIR teaches a dispatcher determining whether the threads are idle or not in order to distribute work (col. 4, lines 29-40). Therefore, it is inherent with the system of GRAFIR that the dispatcher maintains an indication of whether the threads status.

As to claim 42-45, GHAFIR teaches establishing a persistent connection between the selected software thread (thread) and at least one database file system, i.e. a daemon (shared library / storage storing application) (via loading the shared library) (col. 9, lines 27-33; col. 8, lines 20-38; col.3, line 66 – col. 4, line 5).

As to claim 46, GRAFIR teaches local memory accessible to the software threads (vault process address space) (col. 8, lines 41-49).

5.   Claims 23-25 are rejected under 35 U.S.C. 102(e) as being anticipated by LiVECCHI (U.S. Patent 6,427,161).

As to claim 23, LiVECCHI teaches a method for distributing a request amongst software threads (threads), comprising: identifying non-processing software threads (idle worker threads), arranging the non-processing software threads according to use

(via storing the threads in a queue), comparing the non-processing software threads to

the request (determining if the thread needs to be unblocked or awakened / determine if

a request needs to be processed), and based on the comparison, selecting the software

thread to process the request (col. 7, line 19 – col. 8, line 15; col. 11, lines 38-55; col.

12, lines 5-10; col. 12, lines 59 – col. 13, line 10).

As to claims 24 and 25, LiVECCHI teaches determining at least one of the

software thread that is most infrequently used / greatest time since last use while

comparing to the request, and a software thread that is most infrequently used /

greatest time since last use while not comparing to the request. (determining if the

thread needs to be unblocked or awakened / determine if a request needs to be

processed) (col. 7, line 19 – col. 8, line 15; col. 11, lines 38-55; col. 12, lines 5-10; col.

12, lines 59 – col. 13, line 10).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable

over GRAFIR (U.S. Patent 6,202,159).

As to claims 40 and 41, GRAFIR teaches the status module includes a doubly linked list or queue to order the software threads (via the software threads process the requests in the queue based on information in the queue and if they are idle such that the threads are ordered based on their processing) (col. 9, lines 33-38). However, GRAFIR does not teach that the queue is a doubly linked list. Official Notice is taken in that it is well known in the art that a queue is implemented as a doubly linked list and therefore would be obvious in view of GRAFIR that the request are stored in a doubly linked list queue structure.

8.   Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over LiVECCHI (U.S. Patent 6,427,161) in view of GHAFIR (U.S. Patent 6,202,159).

As to claim 29, LiVECCHI substantially discloses the invention above. However, LiVECCHI does not explicitly state the polling step. GRAFIR teaches a dispatcher determining whether the threads are idle or not in order to distribute work requests (col. 4, lines 29-40). Therefore, it is inherent with the system of GRAFIR that the dispatcher maintains an indication of whether the threads status by polling the threads. Therefore, it would be obvious to one skilled in the art the combine the teachings of LiVECCHI with the teachings of GRAFIR in order to facilitate the efficient handling of multiple requests and responses.

As to claim 30, LiVECCHI substantially discloses the invention above. However, LiVECCHI does not explicitly state the polling step. GHAFIR teaches selecting the software thread includes implementing a hash table (registry) to associate the request to at least one thread (idle thread), translating the URL request (browser request in URL format) to a key and indexing the hash table (col. 4, lines 2-15). Refer to claim 29 for motivation to combine.

9.   Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over LiVECCHI (U.S. Patent 6,427,161).

As to claim 26-28, LiVECCHI teaches the arranging the non-processing software threads (threads) by implementing a queue (col. 11, lines 45-55). However, LiVECCHI does not teach that the queue is a doubly linked list. Official Notice is taken in that it is well known in the art that a queue is implemented as a doubly linked list and therefore would be obvious in view of LiVECCHI that the request are stored in a doubly linked list queue structure.

10.   Claims 7, 11, 12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over GHAFIR (U.S. Patent 6,202,159) in view of "On-line Maintenance with On-the-fly Software Replacement" by HAUPTMANN et al.

As to claims 7, 11, 12 and 15-17, GHAFIR substantially discloses the invention above. However, GHAFIR does not explicitly state that the incorporating of application logic by byte-compiling the data into the thread.

HAUPTMANN teaches the communication between nodes on different systems

wherein the nodes communicate with actor's thread on another system and the actors

are sequential updating with different new components overwriting the old components

(pg. 71-73). It is well known to one skilled in the art that a thread is a computational

context, i.e. an executable task, and therefore in order to change the thread it would

have to be recompiled. Therefore, it would be obvious to one skilled in the art to

combine the teachings of GHAFIR with the teachings of HAUPTMANN in order to

update the thread with a new version of software.

Claim Rejections - 35 USC § 101

11.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-30 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. All the cited claims detail a method for

software thread processing of requests. Conceivably all of the claims are implemented

as software instructions and not embodied or functioning on a statutory subject matter,

i.e. a computer readable medium that enables a computer to...., or a computer system,

that executes code to...". Therefore, as detailed in the M.P.E.P. Chapter 2100, the

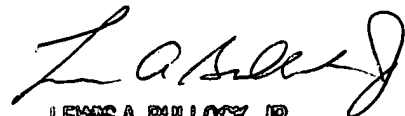claims are rejected under 35 U.S.C. 101..

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571)

272-3759. The examiner can normally be reached on Monday-Friday, 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

March 21, 2005

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER